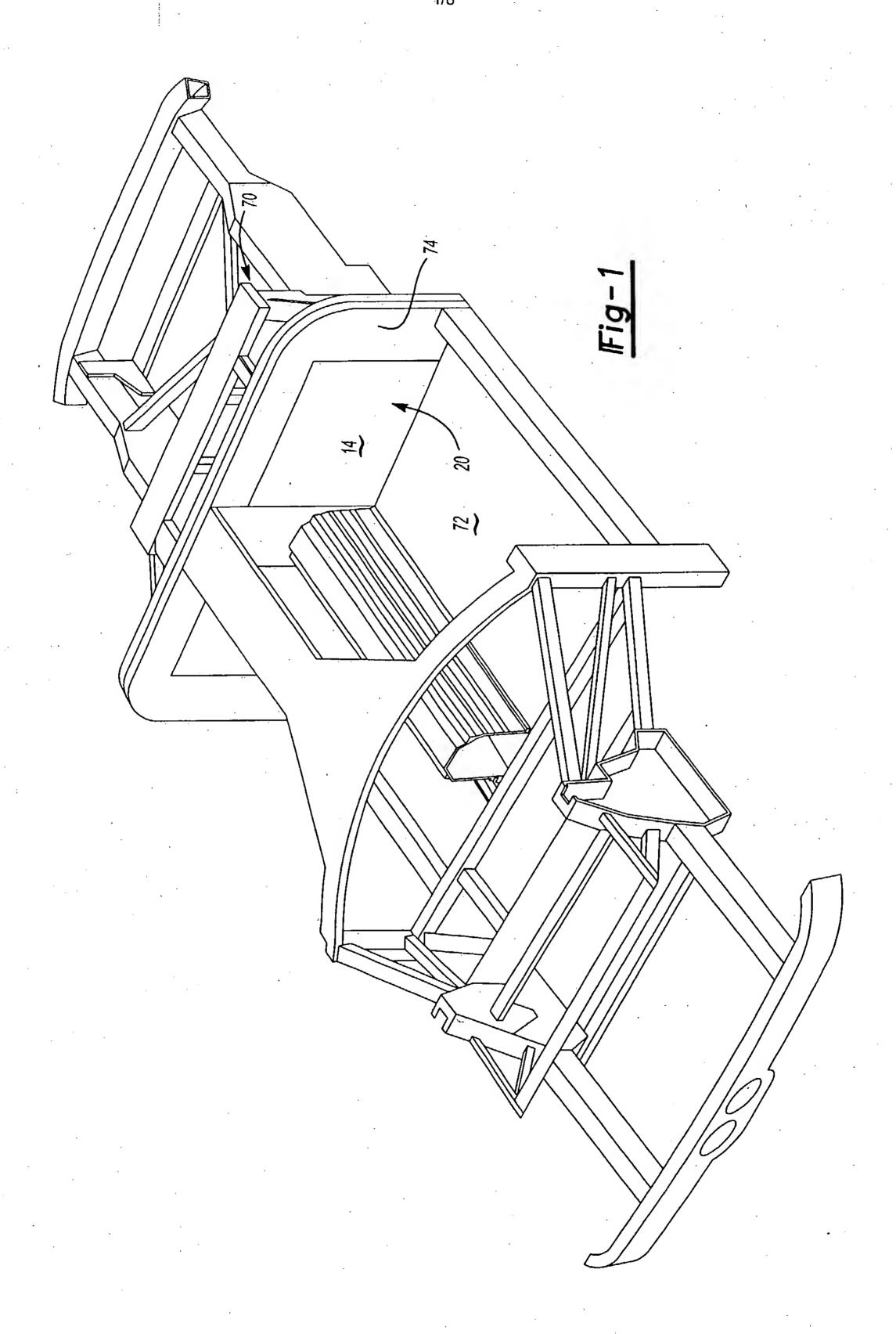
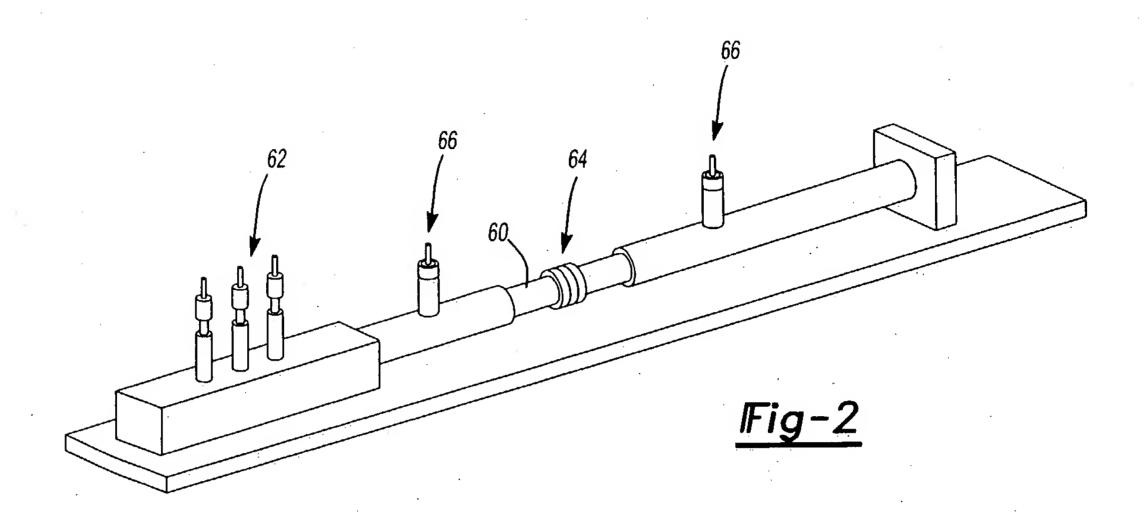
TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 1/8



TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 2/8



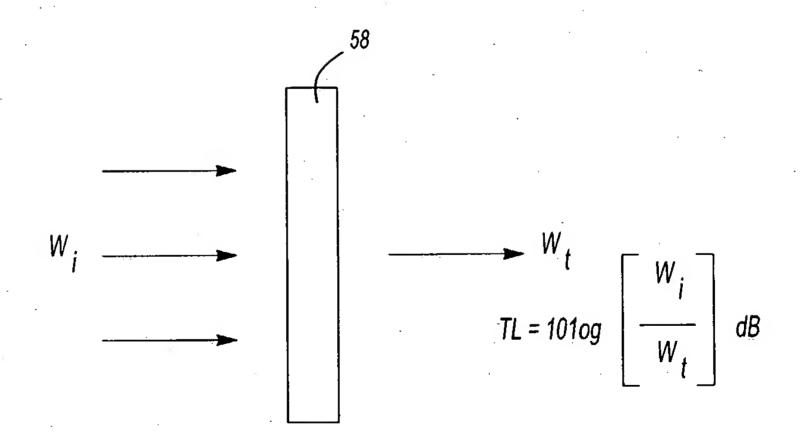


Fig-3

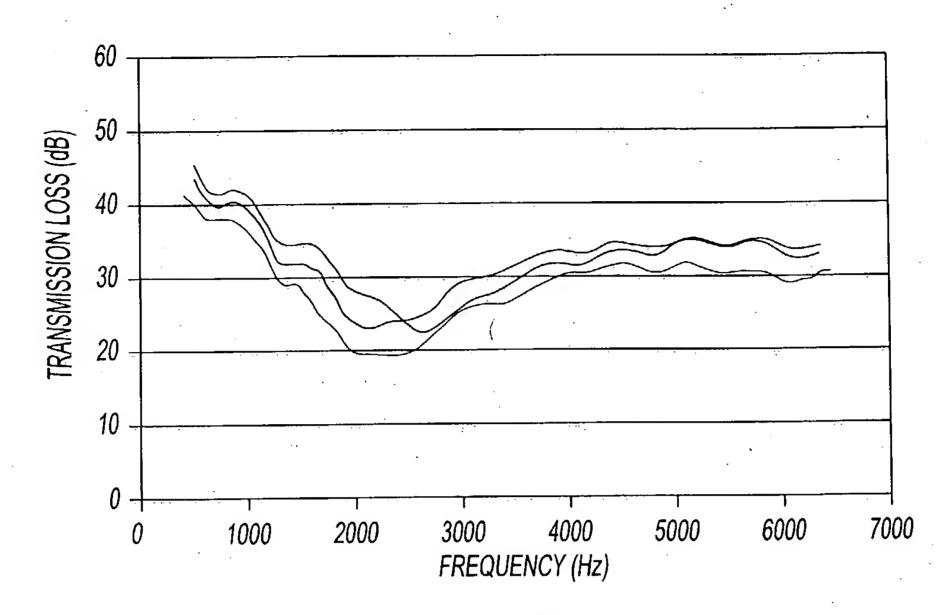


Fig-4A

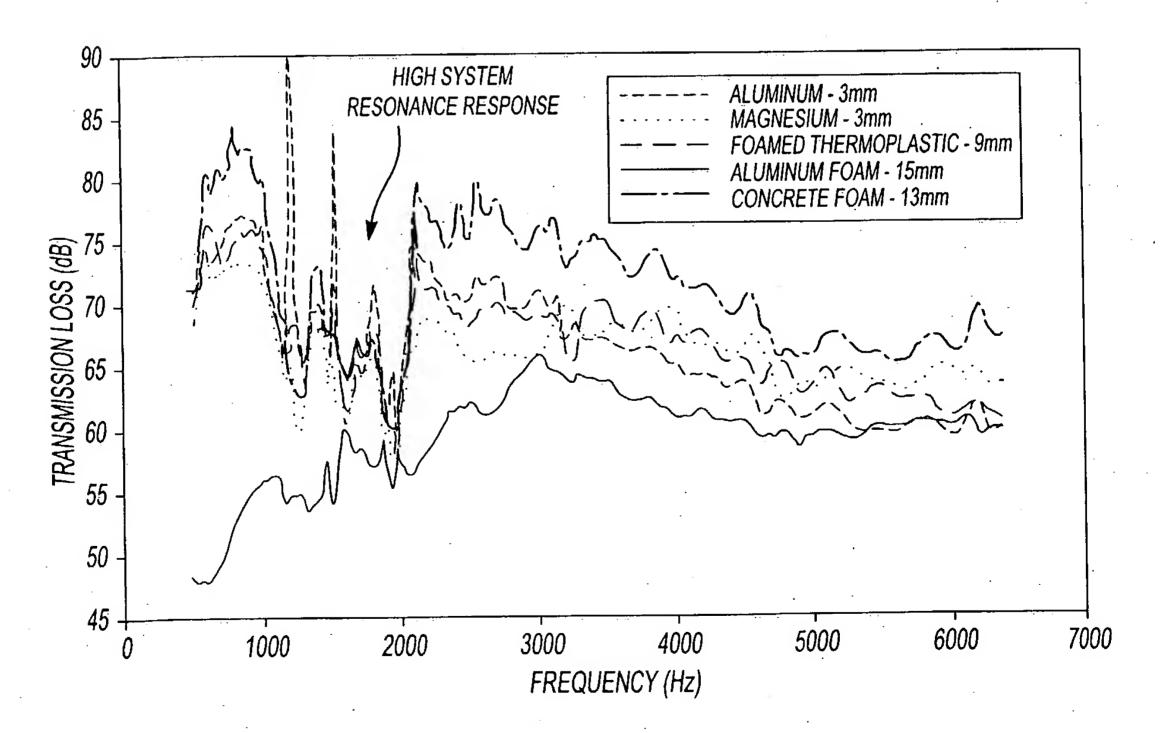


Fig-4B

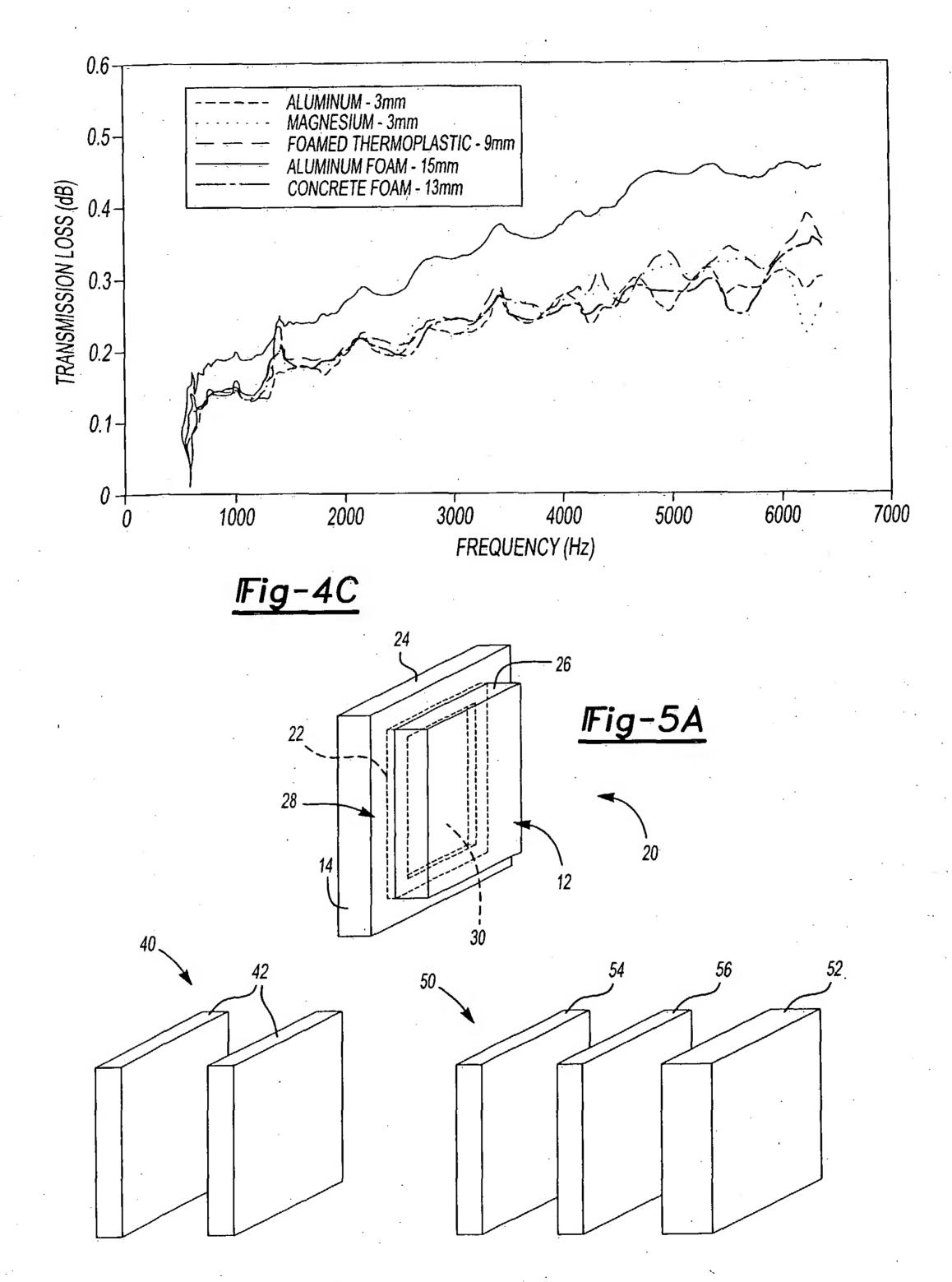


Fig-5B

TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 5/8

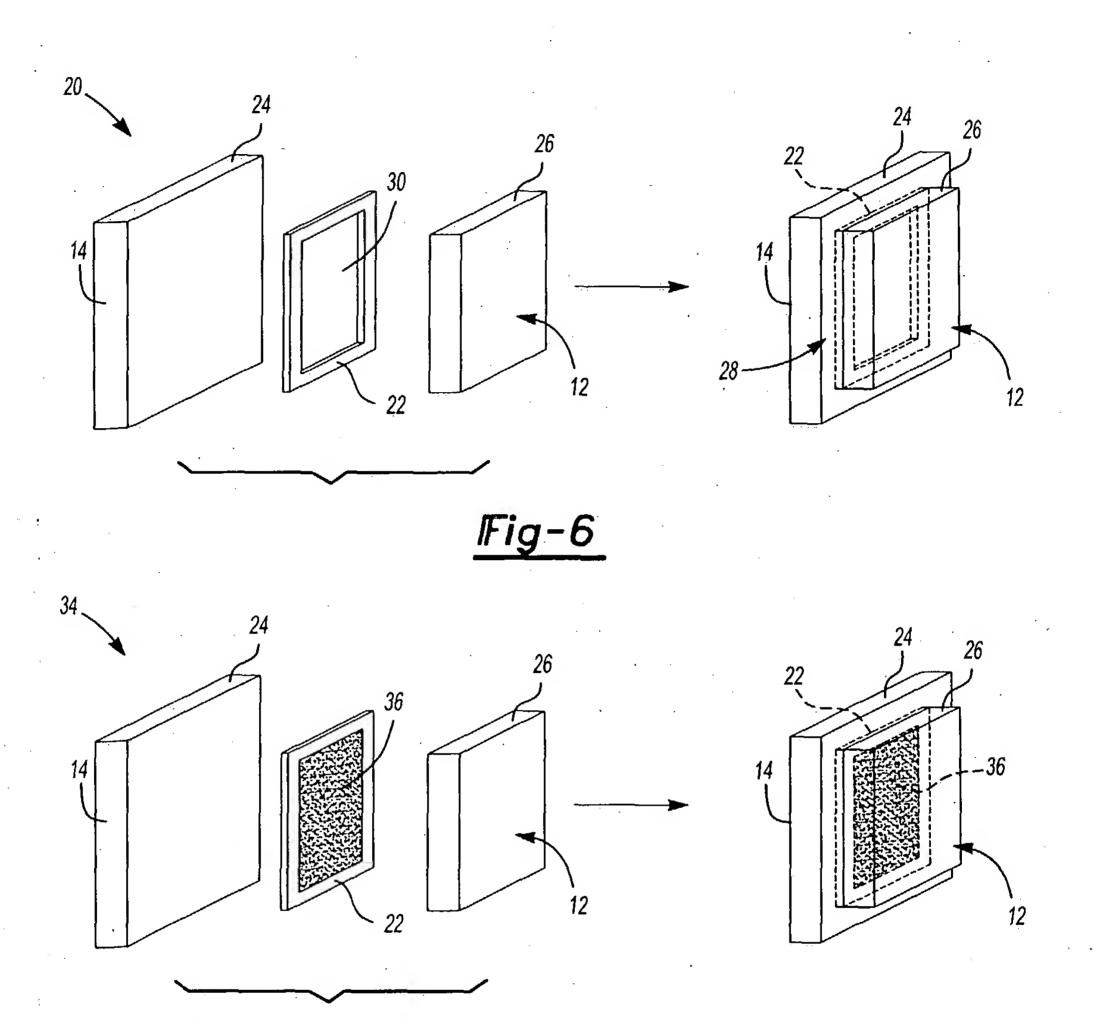
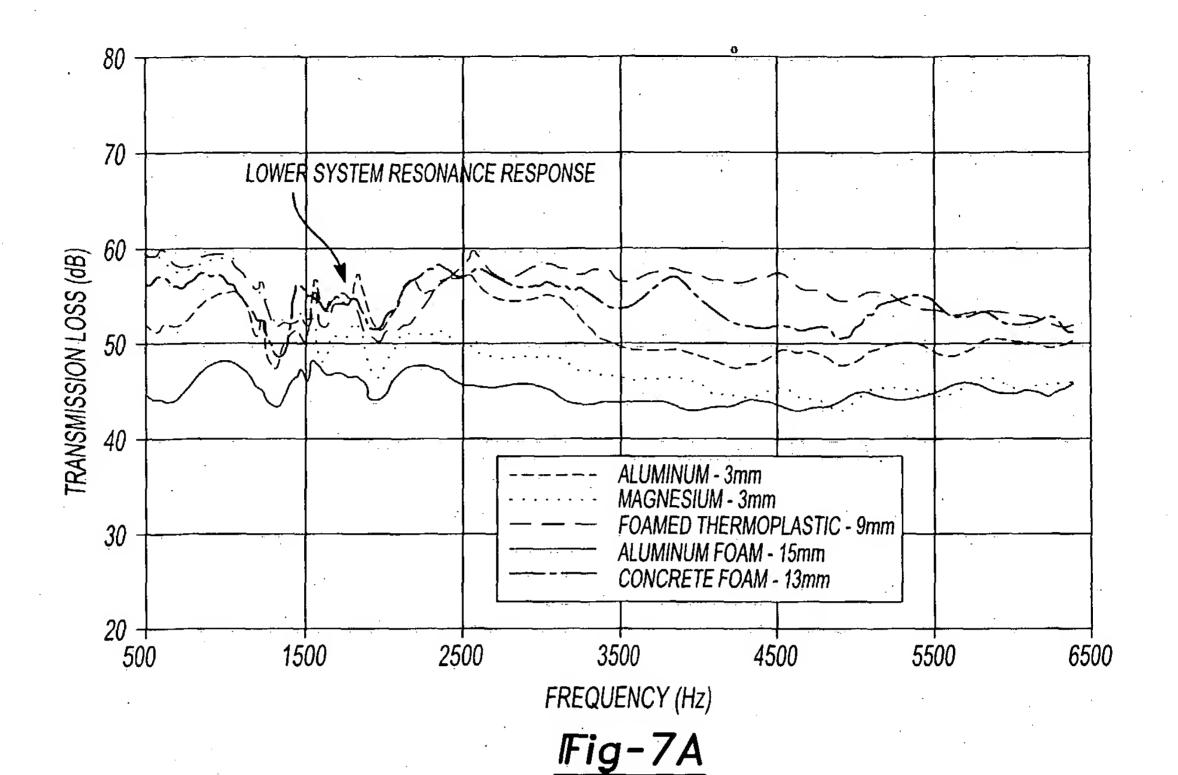


Fig-6A

TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 6/8



0.8 ABSORPTION COEFFICIENT 0.6 ALUMINUM - 3mm MAGNESIUM - 3mm FOAMED THERMOPLASTIC - 9mm ALUMINUM FOAM - 15mm CONCRETE FOAM - 13mm 0.2

3000

4000

FREQUENCY (Hz)

Fig-7B

5000

6000

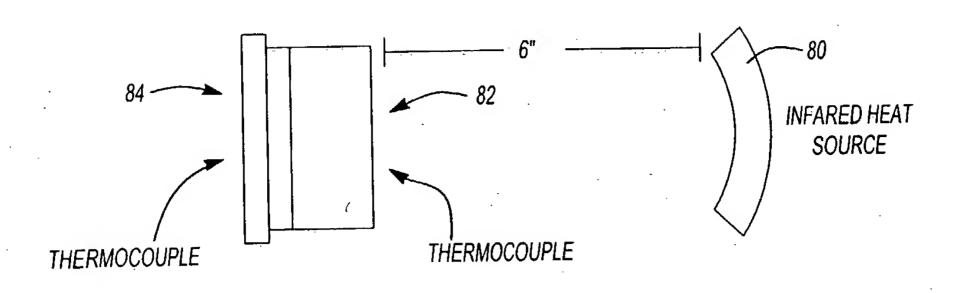
7000

0

1000

2000

TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 7/8



MATERIAL	THICKNESS (mm)	TEMPERATURE DIFFERENCE ACROSS PANEL (°F)	
SOLID ALUMINUM	1	38	
SOLID MAGNESIUM	1.5	50	
ALUMINUM FOAM	13	76	
DECOUPLED ALUMINUM	15	127	
CONCRETE FOAM	14	98	
DECOUPLED CONCRETE	16	135	
CRS WITH FIRE ALL INSULATION (16mm)	17	17 250	
DECOUPLED ALUMINUM WITH FIREWALL INSULATION (7mm THICK)	23	250	

Fig-7C

TITLE: COMPOSITE METAL FOAM DAMPING/REINFORCEMENT STRUCTURE APPLICANTS: CZAPLICKI ET AL. ATTORNEY DOCKET NO. 1001-119 8/8

MATERIAL	DENSITY (g/cc)	THICKNESS (mm)	MASS (kg)
ALUMINUM	2.7	3.0	2.47
ALUMINUM	2.7	1.5	1.23
VISCOELASTIC MATERIAL	1.0	1.5	0.46
FOAMED ALUMINUM	0.4	15	1.83
SYSTEM TOTAL		18	3.52
MAGNESIUM	1.7	1.5	0.78
VISCOELASTIC MATERIAL	1.0	1.5	0.46
FOAMED ALUMINUM	0.4	15	1.83
SYSTEM TOTAL		18	3.07

ASSUMES 533.2mm CROSS SECTIONAL AREA PIECE

Fig-7D